

WHAT IS CLAIMED IS:

1. A tension controller for applying tension to a cable connected to an opened-and-closed body which is movably attached to a vehicle body,  
5 comprising:

an abutting member moving between a first area where the cable is abutted thereon and a second area where the cable is not abutted thereon;

a spring biasing the abutting member in such a direction as to apply tension to the cable in the first area; and

10 an engagement portion holding the abutting member against the biasing force of the spring in the second area.

2. The tension controller according to claim 1, further comprising:

a guide portion extending in a direction intersecting with the  
15 moving direction of the cable in the first area and guiding the abutting member along the direction.

3. The tension controller according to claim 2, wherein the engagement  
portion extends from the guide portion along the moving direction of the  
20 cable.

4. The tension controller according to claim 3, wherein the abutting member has:

an arm fitted into the guide portion slidably and rotatably; and  
25 a pulley attached to the arm with a shaft and moving between the first area and the second area.

5. The tension controller according to claim 4, wherein the arm is substantially U-shaped and has a guide projection at a free end thereof.

5 6. The tension controller according to claim 5, wherein the abutting member is movably fitted in the first area by coupling the guide projection of the arm with the guide portion.

7. The tension controller according to claim 5, wherein the abutting  
10 member is temporarily held in the second area by coupling the guide projection of the arm with the engagement portion.

8. The tension controller according to claim 5, wherein the spring has an end portion engaged with a basal end portion of the arm.

15

9. The tension controller according to claim 4, further comprising:  
a cable guide portion disposed in the vicinity of the abutting member and slidably contacting the cable along the moving direction of the cable.

20

10. The tension controller according to claim 9, wherein a slide contact surface of the cable guide portion is gently curved toward the cable.

11. The tension controller according to claim 10, further comprising:  
25 a casing fixed to the vehicle body and receiving the abutting member, the spring, the engagement portion, the guide portion and the

cable guide portion; and

a cover member covering an opening of the casing.

12. The tension controller according to claim 9, wherein

5 the engagement portion has an engagement groove portion formed on the casing and an engagement hole portion formed on the cover member so as to be opposed to the engagement groove portion, and

the guide portion has a guide groove portion formed on the casing so as to communicate with the engagement groove portion and a guide hole  
10 portion formed on the cover member so as to be opposed to the guide groove portion, and

the cable guide portion is formed into one through-hole portion for passing the cable within the casing.

15 13. An opening-and-closing device for vehicle for opening and closing an opened-and-closed body by using a cable connected to the opened-and-closed body which is movably attached to a vehicle body, comprising:

a base bracket fixed to the vehicle body with bolts;

20 a motor fixed to a disposition face of the base bracket;

a transmission fixed to the disposition face of the base bracket and changing number of the revolutions of the motor;

a rotary drum supported with a shaft in the central portion of the disposition face of the base bracket, and winding one part of the cable  
25 thereon and feeding another part of the cable therefrom at the same time by the rotation of the motor outputted from the transmission;

a first conduit fixed portion fixed to a first end portion of the disposition face of the base bracket and slideably passing the cable therethrough;

5 a second conduit fixed portion fixed to a second end portion of the disposition face of the base bracket and slidably passing the cable therethrough;

a first tension controller fitted between the rotary drum and the first conduit fixed portion and applying tension to the cable fed from the rotary drum, based on the rotation in a first direction of the rotary drum;  
10 and

a second tension controller fitted between the rotary drum and the second conduit fixed portion and applying tension to the cable fed from the rotary drum, based on the rotation in a second direction of the rotary drum.

15 14. The opening-and-closing device for vehicles according to claim 13, wherein one side surface of a casing of the motor is opposed to an external peripheral face of the rotary drum in a short distance, and an output shaft of the motor extends in the direction substantially perpendicular to the shaft of the rotary drum.

20

15. The opening-and-closing device for vehicles according to claim 13, wherein the base bracket has a first recess for receiving a part of the rotary drum therein.

25 16. The opening-and-closing device for vehicles according to claim 15, wherein the first recess has a reinforcement beam therein, the

reinforcement beam being cross-shaped in the cross section.

17. The opening-and-closing device for vehicles according to claim 16,  
wherein the reinforcement beam has a shaft hole into which the shaft of the  
5 rotary drum is rotatably fitted in the central portion thereof.

18. The opening-and-closing device for vehicles according to claim 13,  
wherein the base bracket has a second recess extending along the moving  
direction of the cable in the region thereof opposed to at least one of the  
10 first tension controller and the second tension controller.

19. An opening-and-closing device for vehicle for opening and closing an  
opened-and-closed body by using a first cable and a second cable connected  
to the opened-and-closed body which is movably attached to a vehicle body,  
15 comprising:

a base bracket fixed to the vehicle body with bolts;

a motor fixed to a disposition face of the base bracket;

a transmission fixed to the disposition face of the base bracket and  
changing number of the revolutions of the motor;

20 a rotary drum supported with a shaft in the central portion of the  
disposition face of the base bracket, and winding one of the first cable and  
the second cable thereon and feeding the other of the first cable and the  
second cable therefrom at the same time by the rotation of the motor  
outputted from the transmission;

25 a first conduit fixed portion fixed to a first end portion of the  
disposition face of the base bracket and slideably passing the first cable

therethrough;

a second conduit fixed portion fixed to a second end portion of the disposition face of the base bracket and slidably passing the second cable therethrough;

5           a first tension controller fitted between the rotary drum and the first conduit fixed portion and applying tension to the first cable fed from the rotary drum, based on the rotation in a first direction of the rotary drum; and

10           a second tension controller fitted between the rotary drum and the second conduit fixed portion and applying tension to the second cable fed from the rotary drum, based on the rotation in a second direction of the rotary drum.